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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/527,053	03/09/2005	Yasuhiro Takaki	042715-5015	6840

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EXAMINER

RIVERO, MINERVA

ART UNIT	PAPER NUMBER
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2627

DATE MAILED: 12/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/527,053	Applicant(s) TAKAKI ET AL.	
	Examiner Minerva Rivero	Art Unit 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>2006/08</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. In the Remarks filed 8/04/06, Applicants amended claims 4-10, 14, and 16-20, and submitted arguments for allowability of pending claims.

Response to Arguments

2. Applicant's arguments filed 8/04/06 have been fully considered but they are not persuasive.

Regarding claims 1 and 11, Applicants argue that Wada discloses a substrate having a planar structure as opposed to a concave-convex structure. The examiner cannot concur with Applicants. It is well known in the art that diffraction gratings have a groove-based structure. Wada discloses a diffraction grating (see Col. 18, Lines 49-57 and Abstract), and Revelli effectively supplements Wada's disclosure by specifying a groove period and pitch for a particular diffraction grating implementation (*pitch is 274 nm*, Col. 16, see Fig. 9A, grating 410). Therefore the claims stay rejected.

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Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-2, ⁴⁻⁹~~1~~, 11-12, and ¹⁴⁻¹⁹~~14~~ are rejected under 35 U.S.C. 102(e) as being anticipated by Wada *et al.* (US 6,532,202), hereinafter Wada.

5. Regarding claim 1, Wada discloses a wavefront aberration correcting device for correcting a wavefront aberration of light generated in an optical path of an optical system for irradiating light onto a recording medium or guiding reflected light reflected by the recording medium (Col. 12, Lines 29-40), the device comprising:

a pair of opposing transparent electrode layers provided in the optical path (Col. 13, Lines 19-22; Col. 21, Lines 7-9, see Fig. 14; Col. 22, Lines 12-16, see elements 21, 25 and 27 in Fig. 14; Col. 13, Lines 38-43); and

a liquid crystal sandwiched between the transparent electrode layers, the liquid crystal generating phase change in passing light due to voltage applied to

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the transparent electrode layers (Col. 13, Lines 22-23; Col. 23, Lines 22-26; Col. 22, Lines 10-13),

wherein at least one of the transparent layers is arranged on an antireflective body comprising a substrate, and a finestructure which is formed on the substrate and which has a concave-convex structure (Col. 21, Lines 14-16, see antireflective films 112-115 which have a saw-tooth structure, and substrate 20 in Fig. 14 (Col. 13, Lines 13-14); Col. 16, Lines 65-66).

6. Regarding claim 11, Wada discloses an optical pickup device comprising a light source that emits light for irradiation onto a recording medium, and an objective lens arranged between the light source and the recording medium, the objective lens converging the light from the light source onto an information recording surface of the recording medium (Col. 11, Lines 39-41; Col. 13, Lines 19-22; Col. 21, Lines 7-9, see Fig. 14; Col. 22, Lines 12-16, see elements 21, 25 and 27 in Fig. 14; Col. 13, Lines 38-43), the optical pickup device comprising:

a wavefront aberration correcting device arranged between the light source and the objective lens, the wavefront aberration correcting device comprising a pair of opposing transparent electrode layers provided in an optical path in the optical pickup device; and a liquid crystal sandwiched between the transparent electrode layers, the liquid crystal generating phase change in passing light due to voltage applied to the transparent electrode layers (Col. 13, Lines 19-22; Col. 21, Lines 7-9, see Fig. 14; Col. 22, Lines 12-16, see elements

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21, 25 and 27 in Fig. 14; Col. 13, Lines 38-43; Col. 13, Lines 22-23; Col. 23, Lines 22-26; Col. 22, Lines 10-13).

wherein at least one of the transparent electrode layers is arranged on an antireflective body comprising a substrate, and a finestructure which is formed on the substrate and which has a concave-convex structure (Col. 21, Lines 14-16, see antireflective films 112-115 which have a saw-tooth structure, and substrate 20 in Fig. 14 (Col. 13, Lines 13-14); Col. 16, Lines 65-66).

7. Regarding claim 2 and 12, Wada discloses the concave-convex structure is formed in a one-dimensional and/or a two-dimensional shape (see antireflective films 112-115 which have a saw-tooth structure along a horizontal dimension, Fig. 14):

8. Regarding claims 4 and 14, Wada discloses a wavefront aberration correcting device according wherein the antireflective body comprises the substrate and the finestructure that are both formed from either a glass or a resin, and the substrate and the finestructure are integrally formed (Col. 13, Lines 10-18).

9. Regarding claims 5 and 15, discloses the antireflective body comprises the substrate formed from a glass and the finestructure formed from a resin (Col. 13, Lines 10-18).

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10. Regarding claims 6 and 16, discloses the antireflective body comprises the substrate formed from a resin and the finestructure formed from a glass (Col. 13, Lines 10-18).

11. Regarding claims 7 and 17, discloses an alignment film provided between the transparent electrode layer and liquid crystal (Col. 13, Lines 10-18).

12. Regarding claims 8 and 18, discloses the transparent electrode layer comprises an ITO layer that is an oxide of indium and tin (Col. 13, Lines 10-18).

13. Regarding claims 9 and 19, Wada discloses the transparent electrode layer is partitioned into pixels (*liquid crystal panel*, Col. 2, Lines 16-32).

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains: Patentability shall not be negated by the manner in which the invention was made.

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15. Claims 3 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wada in view of Revelli, Jr. (US 5,276,745), hereinafter Revelli.

Regarding claims 3 and 13, Wada does not explicitly disclose but Revelli does disclose the concave-convex structure has a periodically changing structure, a pitch of the concave-convex structure is no more than 500 nm (*pitch is 274 nm*, Col. 16, see Fig. 9A, grating 410).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to supplement the teachings of Wada with having the concave-convex structure have a periodically changing structure, and a pitch of the concave-convex structure be no more than 500 nm, as disclosed by Revelli, in order to selectively absorb or reflect a light wave, depending on the wavelength.

16. Claims 10 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wada in view of Ueda *et al.* (US 5,481,530), hereinafter Ueda.

Regarding claims 10 and 20, Wada does not disclose but Ueda does disclose the light is a blue semiconductor laser beam (Col. 4, Lines 4-20).

Therefore it would have been obvious to one ordinarily skilled in the art at the time of the invention to supplement the teachings of Wada and have the light

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be a blue semiconductor laser, as disclosed by Ueda, in order to achieve a higher density optical recording medium.

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hideo (US 6,982,181) discloses a manufacturing process for a transmissive type liquid crystal display device.

Narutaki *et al.* (US 6,215,538) disclose a liquid crystal display including color and non-color filter regions.

Narutaki *et al.* (US 6,624,860) disclose a color filter layer providing transmitted light with improved brightness.

Narutaki *et al.* (US 6,906,765) disclose a color filter layer and display device.

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minerva Rivero whose telephone number is (571) 272-7626. The examiner can normally be reached on Monday-Friday 9:00 am - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on (571) 272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MR 11/11/06



WAYNE YOUNG
SUPERVISORY PATENT EXAMINER